



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

Page: 1 of 37

TEST REPORT

Application No.: SHEM2405003102HS
Applicant: Nantong Ningpu Electrical Appliance Co., Ltd.
Address of Applicant: No.139 Huanghe Road, Rudong Economic Development Zone, Nantong, Jiangsu Province, P.R.China 226400
Manufacturer: Nantong Ningpu Electrical Appliance Co., Ltd.
Address of Manufacturer: No.139 Huanghe Road, Rudong Economic Development Zone, Nantong, Jiangsu Province, P.R.China 226400
Factory: Nantong Ningpu Electrical Appliance Co., Ltd.
Address of Factory: No.139 Huanghe Road, Rudong Economic Development Zone, Nantong, Jiangsu Province, P.R.China 226400
Equipment Under Test (EUT):
EUT Name: Room air conditioner
Model No.: NCA-06C/X1E-W, NCA1-06C/X1E-W, NCA2-06C/X1E-W, NCE-06C/X1E-W, NCE1-06C/X1E-W, NCE2-06C/X1E-W, NCD-06C/X1E-W, NCD1-06C/X1E-W, NCD2-06C/X1E-W, NCA-08C/X1E-W, NCA1-08C/X1E-W, NCA2-08C/X1E-W, NCE-08C/X1E-W, NCE1-08C/X1E-W, NCE2-08C/X1E-W, NCD-08C/X1E-W, NCD1-08C/X1E-W, NCD2-08C/X1E-W, NCA-06C/X1E, NCA1-06C/X1E, NCA2-06C/X1E, NCE-06C/X1E, NCE1-06C/X1E, NCE2-06C/X1E, NCD-06C/X1E, NCD1-06C/X1E, NCD2-06C/X1E, NCA-08C/X1E, NCA1-08C/X1E, NCA2-08C/X1E, NCE-08C/X1E, NCE1-08C/X1E, NCE2-08C/X1E, NCD-08C/X1E, NCD1-08C/X1E, NCD2-08C/X1E.
Trademark: NINGPU, NEPO, Acekool
Remark1: Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Remark2: Room air conditioner with WiFi module WBR3
Refer to TUV FCC ID report number: 70881974877-00
FCC ID:2ANDL- WBR3
Module Applicant: Hangzhou Tuya Information Technology Co.,Ltd
Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2024-05-24
Date of Test: 2024-05-27
Date of Issue: 2024-05-29

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

Page: 2 of 37

Revision Record			
Version	Description	Date	Remark
00	Original	2024-05-29	/

Authorized for issue by:			
Tested By		<div>Andy Yang</div>	
		Andy Yang/Project Engineer	
Approved By		<div>Parlam zhan</div>	
		Parlam Zhan / Reviewer	

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	15.107(a);Class B	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.4:2014	15.109(a);Class B	Pass
Radiated Emissions (Above 1GHz)		ANSI C63.4:2014	15.109(g);Class B	Pass

Note: There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model NCA-06C/X1E-W, NCA-08C/X1E-W was tested since their differences were model number and appearance.

NCA-06C/X1E-W with KSK52E11VZZA compressor.

NCA-06C/X1E-W with KSN66E11VBZC1 compressor.

3 Contents

	Page
1 COVER PAGE	1
2 Test Summary	3
3 Contents.....	4
4 General Information	5
4.1 Details of E.U.T.	5
4.2 Description of Support Units.....	5
4.3 Measurement Uncertainty & Decision Rule.....	5
4.4 Test Location	6
4.5 Test Facility	6
4.6 Deviation from Standards.....	6
4.7 Abnormalities from Standard Conditions	6
5 Equipment List	7
6 Emission Test Results.....	9
6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)	9
6.1.1 <i>E.U.T. Operation</i>	9
6.1.2 <i>Test Mode Description</i>	9
6.1.3 <i>Test Setup Diagram</i>	9
6.1.4 <i>Measurement Procedure and Data</i>	9
6.2 Radiated Emissions (30MHz-1GHz).....	18
6.2.1 <i>E.U.T. Operation</i>	18
6.2.2 <i>Test Mode Description</i>	18
6.2.3 <i>Test Setup Diagram</i>	18
6.2.4 <i>Measurement Procedure and Data</i>	19
6.3 Radiated Emissions (Above 1GHz).....	23
6.3.1 <i>E.U.T. Operation</i>	23
6.3.2 <i>Test Mode Description</i>	23
6.3.3 <i>Test Setup Diagram</i>	23
6.3.4 <i>Measurement Procedure and Data</i>	23
7 Test Setup Photo.....	28
8 EUT Constructional Details (EUT Photos).....	31

4 General Information

4.1 Details of E.U.T.

Power supply:	AC 115V 60Hz 570W for NCA-06C/X1E-W AC 115V 60Hz 690W for NCA-08C/X1E-W Test Voltage: AC 115V 60Hz
Cable(s):	AC cable 1.6m for NCA-06C/X1E-W AC cable 1.6m for NCA-08C/X1E-W
Maximum clock frequency:	<15MHz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
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The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty & Decision Rule

Measurement Uncertainty:

No.	Item	Measurement Uncertainty (U_{Lab})	U_{CISPR}
1	Conducted Emission at mains port using AMN	3.4dB (9kHz to 150kHz)	3.8dB (9kHz to 150kHz)
		2.9dB (150kHz to 30MHz)	3.4dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	2.2dB (9kHz to 30MHz)	2.9dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	4.6dB (150kHz to 30MHz)	5.0dB (150kHz to 30MHz)
4	Radiated Power	3.4dB (30MHz to 300MHz)	4.5dB (30MHz to 300MHz)
5	Radiated emission	5.7dB (30MHz-1GHz)	6.3dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)	5.2dB (1GHz-6GHz)
		5.0dB (6GHz-18GHz)	5.5dB (6GHz-18GHz)
6	Radiated disturbance (disturbance current in a LLAS)	2.6dB (9kHz to 30MHz)	3.3dB (9kHz to 30MHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Decision Rule:

- CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

U_{LAB} less than U_{CISPR} , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

- **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.
Company Number: 8617A

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2023/12/19	2024/12/18
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2023/12/19	2024/12/18
Line impedance stabilization network	EMCO	3816_2	SHEM019-1	2023/12/19	2024/12/18
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2023/12/19	2024/12/18
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2023/12/19	2024/12/18
CE test Cable	/	/	SHEM172-1	2023/12/19	2024/12/18
Test Software	ESE	e3	Version: 6.191211	N/A	N/A

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2023/12/19	2024/12/18
EMI test receiver	Rohde & Schwarz	ESR7	SHEM201-1	2023/08/01	2024/07/31
CONTROLLER	INNCO	CO2000	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2023/09/03	2025/09/02
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM202-1	2023/04/17	2025/04/16
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2023/05/06	2026/05/05
Pre-amplifier	HP	8447D	SHEM236-1	2023/12/19	2024/12/18
Pre-amplifier	HP	8447D	SHEM143-1	2023/12/19	2024/12/18
RE test Cable	/	/	SHEM217-2	2023/12/19	2024/12/18
Test Software	ESE	e3	Version: 6.191211	N/A	N/A
Semi/Fully Anechoic	TIANDE	9*6*6M	SHEM198-1	2024/05/06	2027/05/05



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

Page: 8 of 37

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2023/12/19	2024/12/18
EMI test receiver	Rohde & Schwarz	ESR7	SHEM201-1	2023/08/01	2024/07/31
CONTROLLER	INNCO	CO2000	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2023/09/03	2025/09/02
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM202-1	2023/04/17	2025/04/16
Horn Antenna (1-18GHz)	Schwarzbeck	BBHA9120D	SHEM050-1	2023/09/03	2025/09/02
Pre-amplifier (1-18GHz)	Schwarzbeck	SCU-F0118-G40-BZ4-CSS(F)	SHEM050-2	2023/12/19	2024/12/18
Horn Antenna (1-18GHz)	Schwarzbeck	HF906	SHEM009-1	2022/08/11	2024/08/10
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2023/05/06	2026/05/05
RE test Cable	/	/	SHEM217-2	2023/12/19	2024/12/18
Test Software	ESE	e3	Version: 6.191211	N/A	N/A
Semi/Fully Anechoic	TIANDE	9*6*6M	SHEM198-1	2024/05/06	2027/05/05

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Atmospheric Pressure Meter	Nanjing XiangRuiDe	DYM3	SHEM082-2	2024-01-18	2027-01-17
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-9~10	2023-12-29	2024-12-28
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-5	2023-07-23	2024-07-22
Digital Temperature&humidity recorder	Jianda Renke	RS-WS-N01-6J	SHEM247-1~8	2024-01-13	2025-01-12
Digital Multimeter	FLUKE	17B+	SHEM271-1	2023-07-19	2024-07-18
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	317	SHEM001-2	2023-11-08	2024-11-07

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

0.15MHz-0.5MHz: 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average

0.5MHz-5MHz: 56dB(μV) quasi-peak, 46dB(μV) average

5MHz-30MHz: 60dB(μV) quasi-peak, 50dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

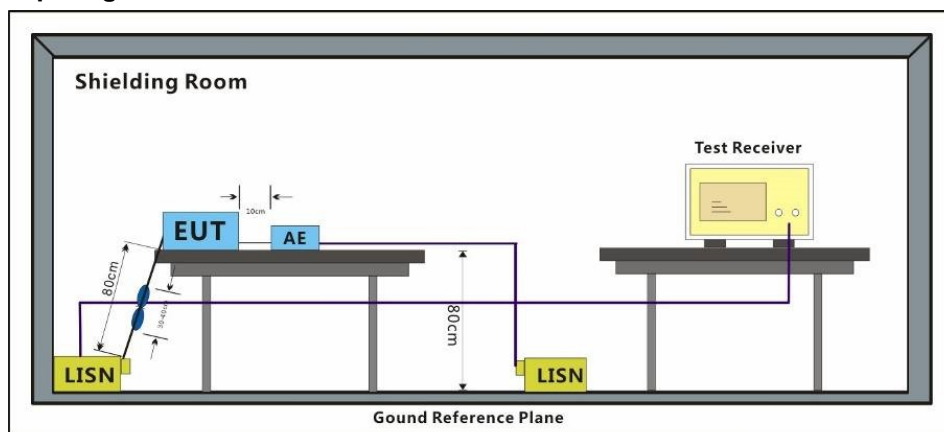
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Cooling mode: Keep EUT cooling continuously for NCA-06C/X1E-W.
Final test	01	Cooling mode: Keep EUT cooling continuously for NCA-08C/X1E-W.

6.1.3 Test Setup Diagram

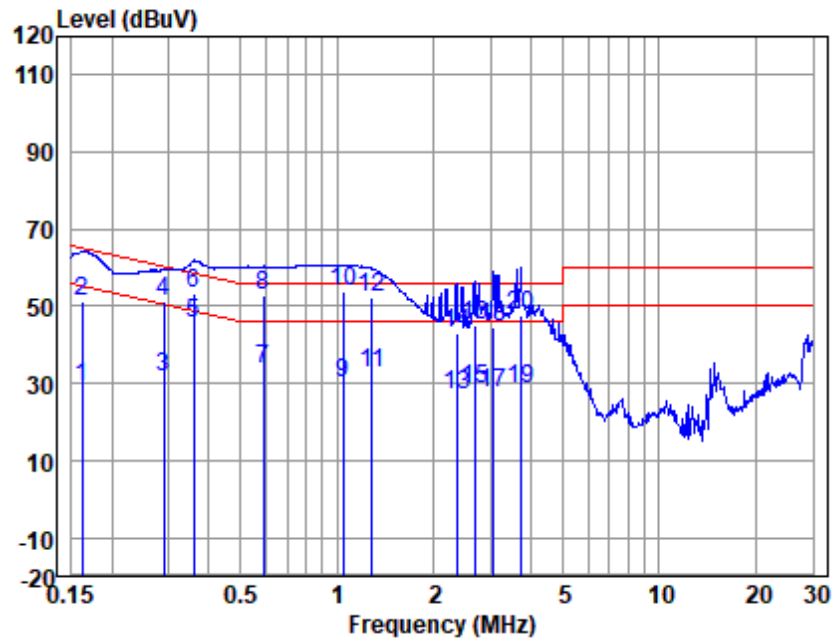


6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line



LISN : LINE
EUT/Project No : 3102HS
Test Mode : 00

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.16	18.70	0.50	9.90	29.10	55.38	-26.28	Average
2	0.16	40.86	0.50	9.90	51.26	65.38	-14.12	QP
3	0.29	21.34	0.38	9.90	31.62	50.50	-18.88	Average
4	0.29	41.18	0.38	9.90	51.46	60.50	-9.04	QP
5	0.36	35.54	0.31	9.90	45.75	48.74	-2.99	Average
6	0.36	43.01	0.31	9.90	53.22	58.74	-5.52	QP
7	0.59	23.72	0.20	9.90	33.82	46.00	-12.18	Average
8	0.59	42.76	0.20	9.90	52.86	56.00	-3.14	QP
9	1.04	19.68	0.20	10.01	29.89	46.00	-16.11	Average
10	1.04	43.41	0.20	10.01	53.62	56.00	-2.38	QP
11	1.28	22.24	0.20	10.04	32.48	46.00	-13.52	Average
12	1.28	41.98	0.20	10.04	52.22	56.00	-3.78	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

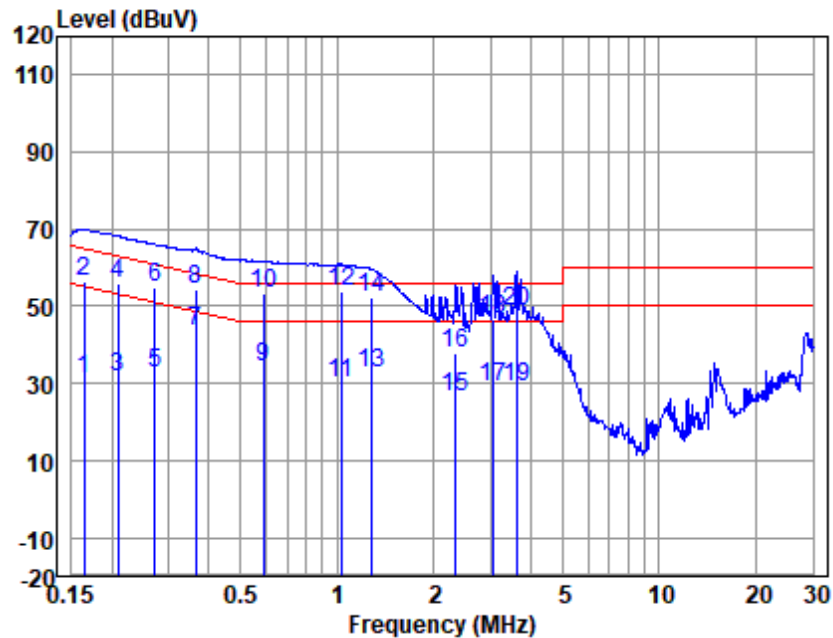
Page: 11 of 37

Test Mode: 00; Line: Live line

	Freq	Read	LISN	Cable	Emission		Over	
	(MHz)	level	Factor	Loss	Level	Limit	Limit	Remark
		(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
13	2.35	16.59	0.22	10.12	26.93	46.00	-19.07	Average
14	2.35	32.48	0.22	10.12	42.82	56.00	-13.18	QP
15	2.66	18.40	0.23	10.13	28.76	46.00	-17.24	Average
16	2.66	34.94	0.23	10.13	45.30	56.00	-10.70	QP
17	3.06	17.34	0.25	10.15	27.74	46.00	-18.26	Average
18	3.06	34.25	0.25	10.15	44.65	56.00	-11.35	QP
19	3.72	18.14	0.27	10.17	28.58	46.00	-17.42	Average
20	3.72	37.14	0.27	10.17	47.58	56.00	-8.42	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss

Test Mode: 00; Line: Neutral Line



LISN : NEUTRAL
EUT/Project No : 3102HS
Test Mode : 00

	Freq (MHz)	Read level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBUV)	Limit (dBUV)	Over Limit (dB)	Remark
1	0.16	20.67	0.33	9.90	30.90	55.25	-24.35	Average
2	0.16	46.06	0.33	9.90	56.29	65.25	-8.96	QP
3	0.21	21.54	0.30	9.90	31.74	53.27	-21.53	Average
4	0.21	45.88	0.30	9.90	56.08	63.27	-7.19	QP
5	0.27	22.69	0.30	9.90	32.89	51.03	-18.14	Average
6	0.27	44.78	0.30	9.90	54.98	61.03	-6.05	QP
7	0.37	33.59	0.30	9.90	43.79	48.61	-4.82	Average
8	0.37	44.36	0.30	9.90	54.56	58.61	-4.05	QP
9	0.59	24.08	0.30	9.90	34.28	46.00	-11.72	Average
10	0.59	43.18	0.30	9.90	53.38	56.00	-2.62	QP
11	1.03	19.97	0.30	10.00	30.27	46.00	-15.73	Average
12	1.03	43.41	0.30	10.00	53.71	56.00	-2.29	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

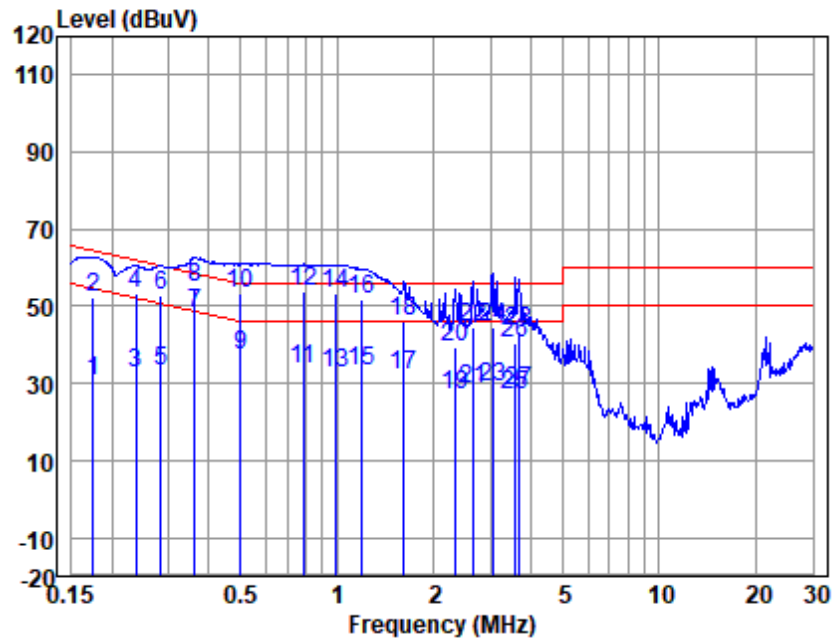
Page: 13 of 37

Test Mode: 00; Line: Neutral Line

	Freq	Read	LISN	Cable	Emission		Over	
	(MHz)	level	Factor	Loss	Level	Limit	Limit	Remark
		(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
13	1.28	22.51	0.30	10.04	32.85	46.00	-13.15	Average
14	1.28	41.89	0.30	10.04	52.23	56.00	-3.77	QP
15	2.33	15.85	0.33	10.12	26.30	46.00	-19.70	Average
16	2.33	27.65	0.33	10.12	38.10	56.00	-17.90	QP
17	3.06	18.31	0.39	10.15	28.85	46.00	-17.15	Average
18	3.06	36.15	0.39	10.15	46.69	56.00	-9.31	QP
19	3.60	18.63	0.43	10.16	29.22	46.00	-16.78	Average
20	3.60	38.25	0.43	10.16	48.84	56.00	-7.16	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss

Test Mode: 01; Line: Live line



LISN : LINE
EUT/Project No : 3102HS
Test Mode : 01

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.17	20.42	0.50	9.90	30.82	54.72	-23.90	Average
2	0.17	41.97	0.50	9.90	52.37	64.72	-12.35	QP
3	0.24	22.34	0.44	9.90	32.68	52.17	-19.49	Average
4	0.24	42.89	0.44	9.90	53.23	62.17	-8.94	QP
5	0.28	23.08	0.39	9.90	33.37	50.72	-17.35	Average
6	0.28	42.77	0.39	9.90	53.06	60.72	-7.66	QP
7	0.36	37.94	0.31	9.90	48.15	48.69	-0.54	Average
8	0.36	44.45	0.31	9.90	54.66	58.69	-4.03	QP
9	0.50	27.01	0.20	9.90	37.11	46.00	-8.89	Average
10	0.50	43.48	0.20	9.90	53.58	56.00	-2.42	QP
11	0.79	23.82	0.20	9.93	33.95	46.00	-12.05	Average
12	0.79	43.49	0.20	9.93	53.62	56.00	-2.38	QP

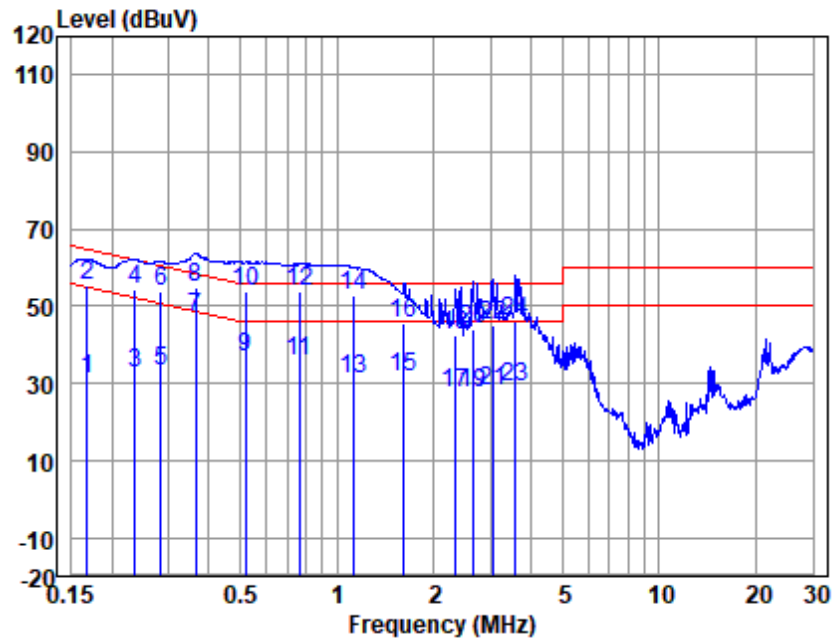
Notes: Emission Level = Read Level + LISN Factor + Cable loss

Test Mode: 01; Line: Live line

	Freq	Read	LISN	Cable	Emission		Over	
	(MHz)	level	Factor	Loss	Level	Limit	Limit	Remark
		(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
13	0.99	22.40	0.20	10.00	32.60	46.00	-13.40	Average
14	0.99	43.09	0.20	10.00	53.29	56.00	-2.71	QP
15	1.19	23.21	0.20	10.02	33.43	46.00	-12.57	Average
16	1.19	41.84	0.20	10.02	52.06	56.00	-3.94	QP
17	1.61	21.82	0.20	10.07	32.09	46.00	-13.91	Average
18	1.61	35.66	0.20	10.07	45.93	56.00	-10.07	QP
19	2.32	16.69	0.22	10.12	27.03	46.00	-18.97	Average
20	2.32	28.98	0.22	10.12	39.32	56.00	-16.68	QP
21	2.64	18.14	0.23	10.13	28.50	46.00	-17.50	Average
22	2.64	34.37	0.23	10.13	44.73	56.00	-11.27	QP
23	3.04	18.74	0.25	10.15	29.14	46.00	-16.86	Average
24	3.04	34.42	0.25	10.15	44.82	56.00	-11.18	QP
25	3.57	16.75	0.26	10.16	27.17	46.00	-18.83	Average
26	3.57	30.06	0.26	10.16	40.48	56.00	-15.52	QP
27	3.68	17.65	0.27	10.17	28.09	46.00	-17.91	Average
28	3.68	33.15	0.27	10.17	43.59	56.00	-12.41	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss

Test Mode: 01; Line: Neutral Line



LISN : NEUTRAL
EUT/Project No : 3102HS
Test Mode : 01

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.17	20.76	0.32	9.90	30.98	55.08	-24.10	Average
2	0.17	45.00	0.32	9.90	55.22	65.08	-9.86	QP
3	0.24	22.54	0.30	9.90	32.74	52.26	-19.52	Average
4	0.24	44.40	0.30	9.90	54.60	62.26	-7.66	QP
5	0.28	23.13	0.30	9.90	33.33	50.68	-17.35	Average
6	0.28	43.91	0.30	9.90	54.11	60.68	-6.57	QP
7	0.36	36.90	0.30	9.90	47.10	48.65	-1.55	Average
8	0.36	44.75	0.30	9.90	54.95	58.65	-3.70	QP
9	0.52	26.62	0.30	9.90	36.82	46.00	-9.18	Average
10	0.52	43.74	0.30	9.90	53.94	56.00	-2.06	QP
11	0.76	25.57	0.30	9.92	35.79	46.00	-10.21	Average
12	0.76	43.56	0.30	9.92	53.78	56.00	-2.22	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM240500310201

Page: 17 of 37

Test Mode: 01; Line: Neutral Line

	Freq	Read	LISN	Cable	Emission		Over	
	(MHz)	level	Factor	Loss	Level	Limit	Limit	Remark
		(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
13	1.13	20.82	0.30	10.02	31.14	46.00	-14.86	Average
14	1.13	42.35	0.30	10.02	52.67	56.00	-3.33	QP
15	1.61	21.27	0.30	10.07	31.64	46.00	-14.36	Average
16	1.61	35.36	0.30	10.07	45.73	56.00	-10.27	QP
17	2.33	17.20	0.33	10.12	27.65	46.00	-18.35	Average
18	2.33	32.07	0.33	10.12	42.52	56.00	-13.48	QP
19	2.64	17.25	0.36	10.13	27.74	46.00	-18.26	Average
20	2.64	33.47	0.36	10.13	43.96	56.00	-12.04	QP
21	3.04	17.64	0.39	10.15	28.18	46.00	-17.82	Average
22	3.04	34.49	0.39	10.15	45.03	56.00	-10.97	QP
23	3.58	18.60	0.43	10.16	29.19	46.00	-16.81	Average
24	3.58	35.33	0.43	10.16	45.92	56.00	-10.08	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss

6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

Class B

Test Distance: 3m

30MHz -88MHz 40.0(dBμV/m) quasi-peak

88MHz-216MHz 43.5(dBμV/m) quasi-peak

216MHz-960MHz 46.0(dBμV/m) quasi-peak

960MHz-1000MHz 54.0(dBμV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

Class B

Test Distance: 10m

30MHz -88MHz 29.5(dBμV/m) quasi-peak

88MHz-216MHz 33.1(dBμV/m) quasi-peak

216MHz-960MHz 35.6(dBμV/m) quasi-peak

960MHz-1000MHz 43.5(dBμV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

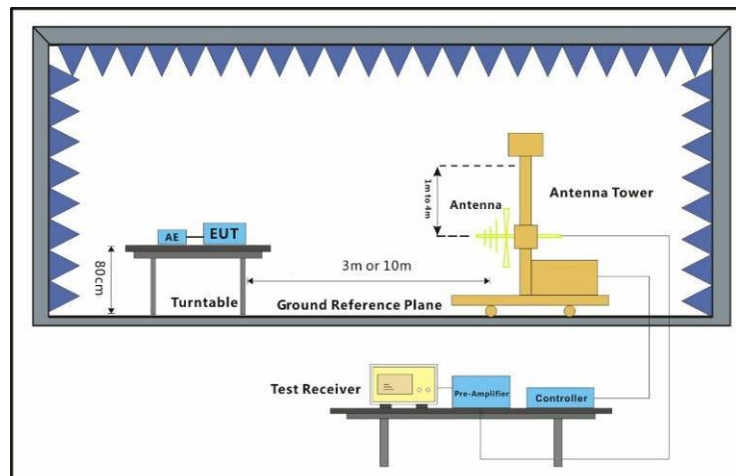
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Cooling mode: Keep EUT cooling continuously for NCA-06C/X1E-W.
Final test	01	Cooling mode: Keep EUT cooling continuously for NCA-08C/X1E-W.

6.2.3 Test Setup Diagram

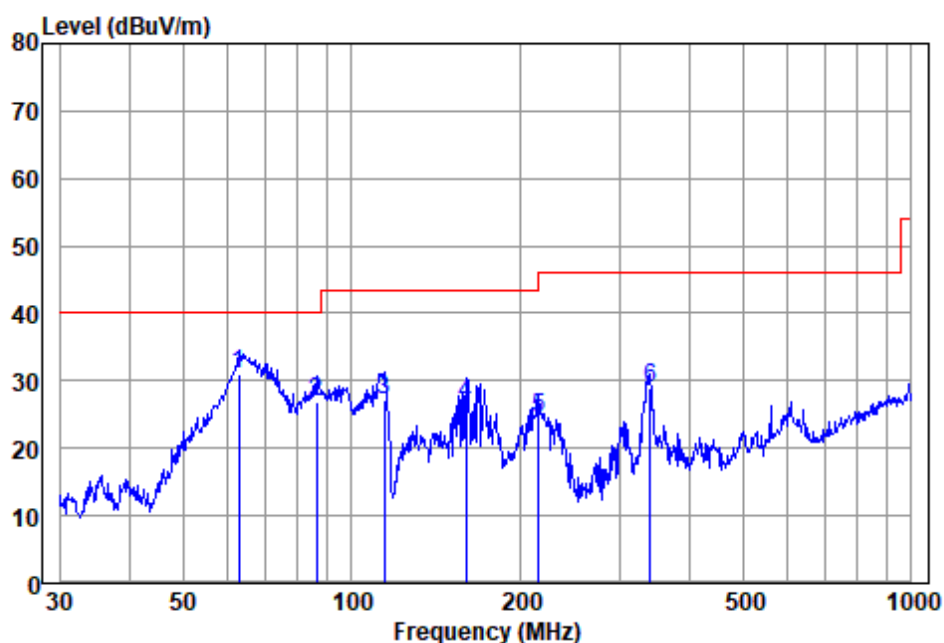


6.2.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal

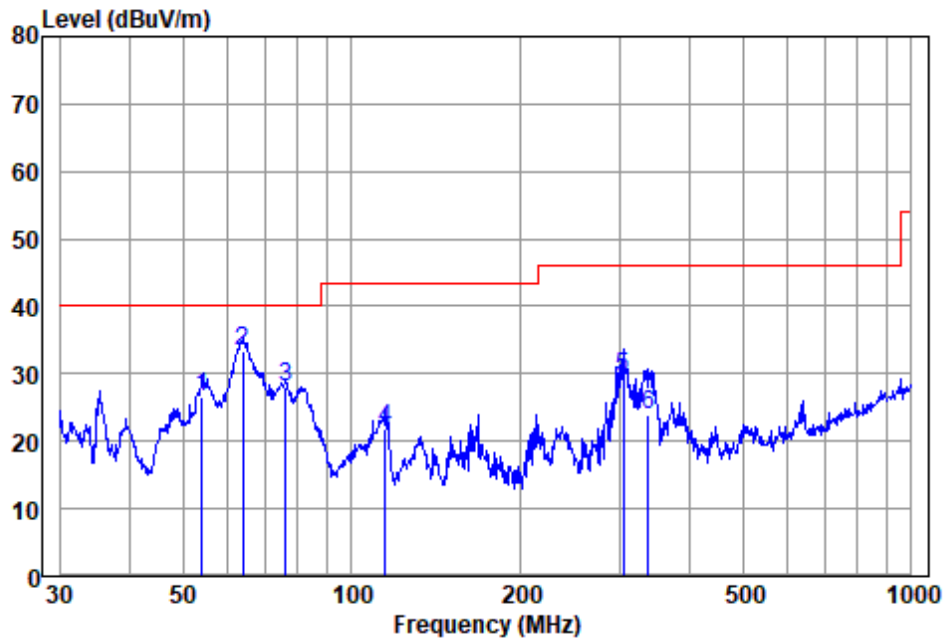


Antenna Polarity :HORIZONTAL
EUT/Project :3102HS
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	62.871	50.00	12.64	1.59	33.20	31.03	40.00	-8.97	QP
2	86.503	50.34	7.75	1.84	33.20	26.73	40.00	-13.27	QP
3	114.114	47.42	10.60	2.28	33.13	27.17	43.50	-16.33	QP
4	159.784	43.07	13.60	2.79	33.00	26.46	43.50	-17.04	QP
5	216.024	44.62	9.86	3.08	32.93	24.63	46.00	-21.37	QP
6	340.782	43.06	14.60	3.92	32.72	28.86	46.00	-17.14	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical

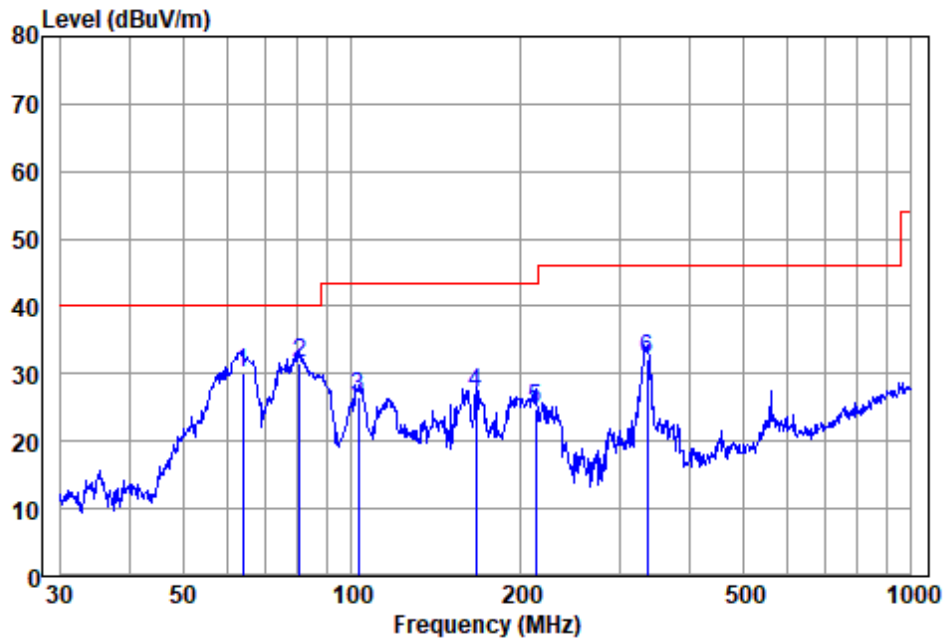


Antenna Polarity :VERTICAL
EUT/Project :3102HS
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	53.882	44.32	13.90	1.46	33.20	26.48	40.00	-13.52	QP
2	63.983	52.56	12.40	1.62	33.20	33.38	40.00	-6.62	QP
3	76.244	49.23	10.08	1.89	33.20	28.00	40.00	-12.00	QP
4	114.917	42.02	10.80	2.23	33.13	21.92	43.50	-21.58	QP
5	305.680	44.89	13.57	3.87	32.79	29.54	46.00	-16.46	QP
6	338.400	38.07	14.56	3.93	32.72	23.84	46.00	-22.16	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal



Antenna Polarity :HORIZONTAL

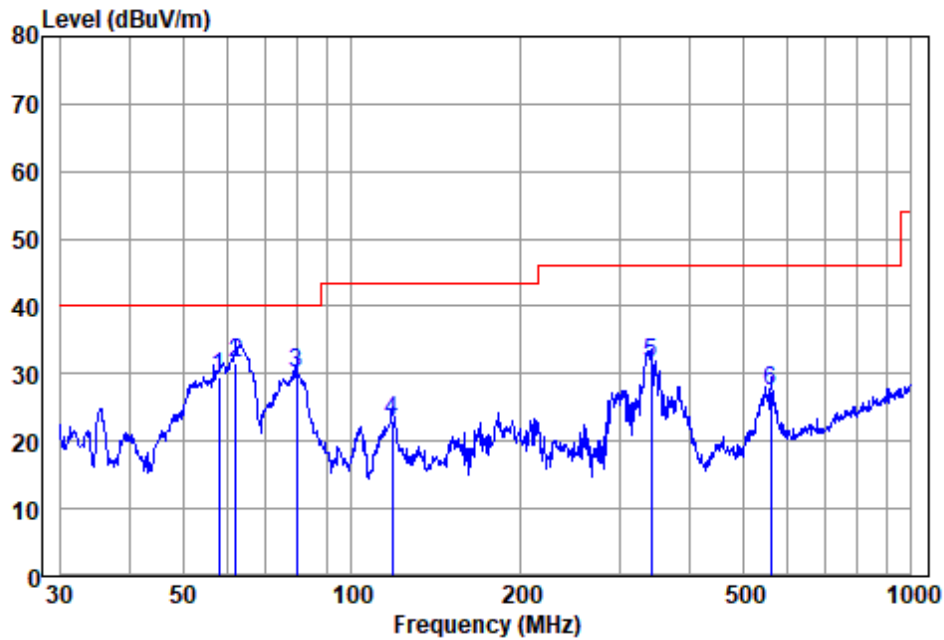
EUT/Project :3102HS

Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	63.983	49.35	12.40	1.62	33.20	30.17	40.00	-9.83	QP
2	80.644	53.91	8.87	1.87	33.20	31.45	40.00	-8.55	QP
3	102.719	47.77	9.57	2.29	33.19	26.44	43.50	-17.06	QP
4	166.651	44.09	13.15	2.85	33.00	27.09	43.50	-16.41	QP
5	213.015	44.74	9.83	3.09	32.94	24.72	43.50	-18.78	QP
6	337.216	46.58	14.53	3.93	32.72	32.32	46.00	-13.68	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical



Antenna Polarity :VERTICAL
EUT/Project :3102HS
Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	57.999	47.92	13.30	1.51	33.20	29.53	40.00	-10.47	QP
2	61.995	50.54	12.80	1.56	33.20	31.70	40.00	-8.30	QP
3	79.800	52.42	9.07	1.86	33.20	30.15	40.00	-9.85	QP
4	118.186	42.83	11.00	2.39	33.12	23.10	43.50	-20.40	QP
5	341.979	45.67	14.60	4.01	32.71	31.57	46.00	-14.43	QP
6	560.693	35.81	19.10	5.28	32.70	27.49	46.00	-18.51	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

6.3 Radiated Emissions (Above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

Class B

Above 1GHz 74(dBμV/m) peak, 54(dBμV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

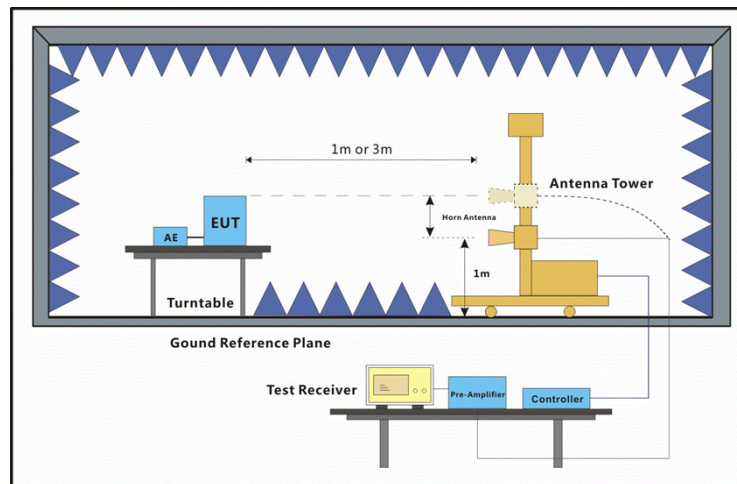
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Cooling mode: Keep EUT cooling continuously for NCA-06C/X1E-W.
Final test	01	Cooling mode: Keep EUT cooling continuously for NCA-08C/X1E-W.

6.3.3 Test Setup Diagram



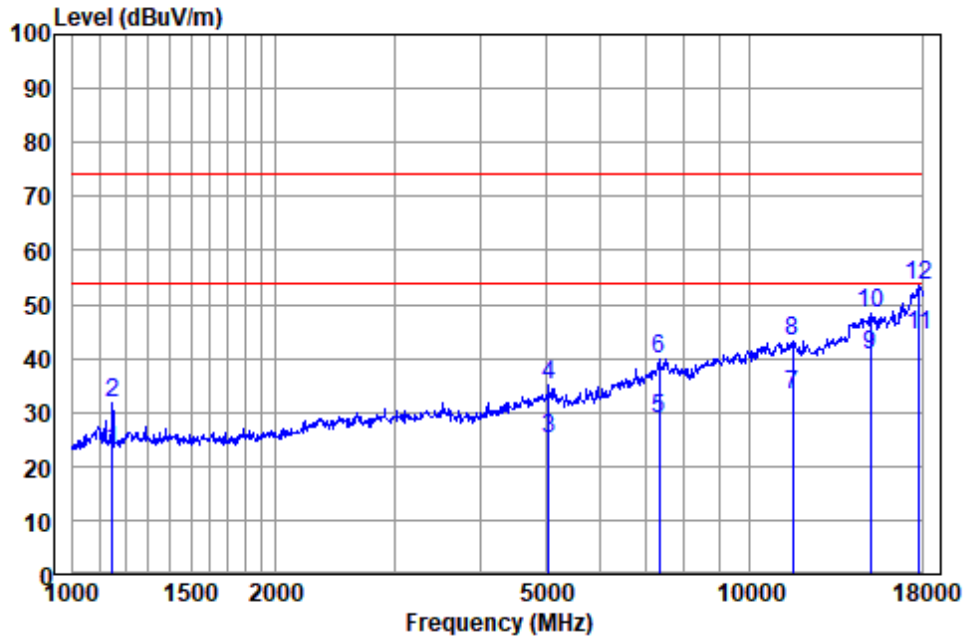
6.3.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal

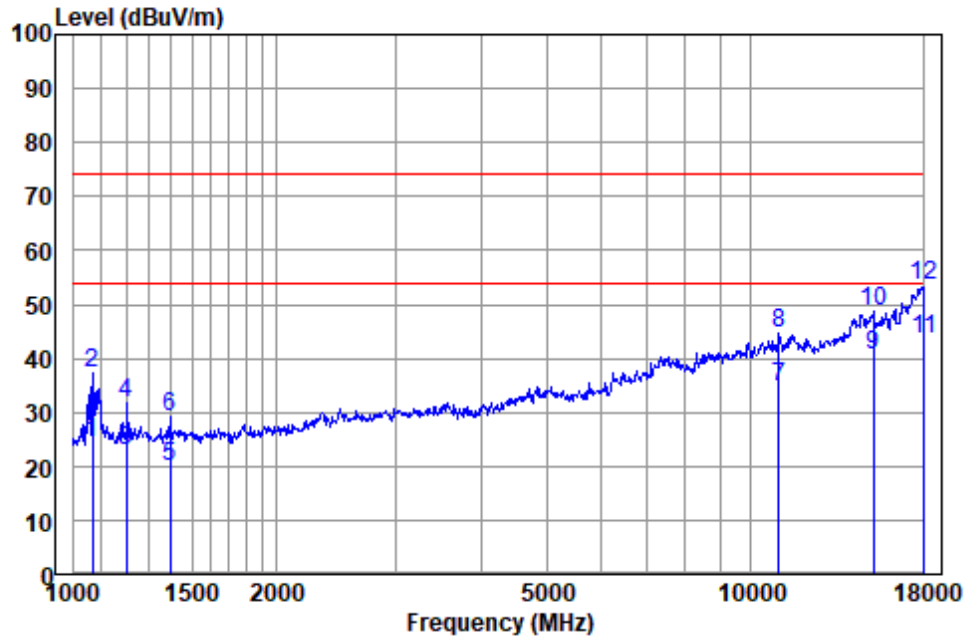


Antenna Polarity :HORIZONTAL
EUT/Project :3102HS
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1148.823	37.77	23.20	3.73	41.90	22.80	54.00	-31.20	Average
2	1148.823	46.77	23.20	3.73	41.90	31.80	74.00	-42.20	Peak
3	5046.062	28.24	31.30	8.20	42.80	24.94	54.00	-29.06	Average
4	5046.062	38.24	31.30	8.20	42.80	34.94	74.00	-39.06	Peak
5	7347.474	25.63	36.27	9.46	42.59	28.77	54.00	-25.23	Average
6	7347.474	36.63	36.27	9.46	42.59	39.77	74.00	-34.23	Peak
7	11533.480	24.56	39.37	11.87	42.57	33.23	54.00	-20.77	Average
8	11533.480	34.56	39.37	11.87	42.57	43.23	74.00	-30.77	Peak
9	15046.850	28.84	40.36	13.38	42.17	40.41	54.00	-13.59	Average
10	15046.850	36.84	40.36	13.38	42.17	48.41	74.00	-25.59	Peak
11	17741.740	26.75	43.80	14.33	40.54	44.34	54.00	-9.66	Average
12	17741.740	35.75	43.80	14.33	40.54	53.34	74.00	-20.66	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical

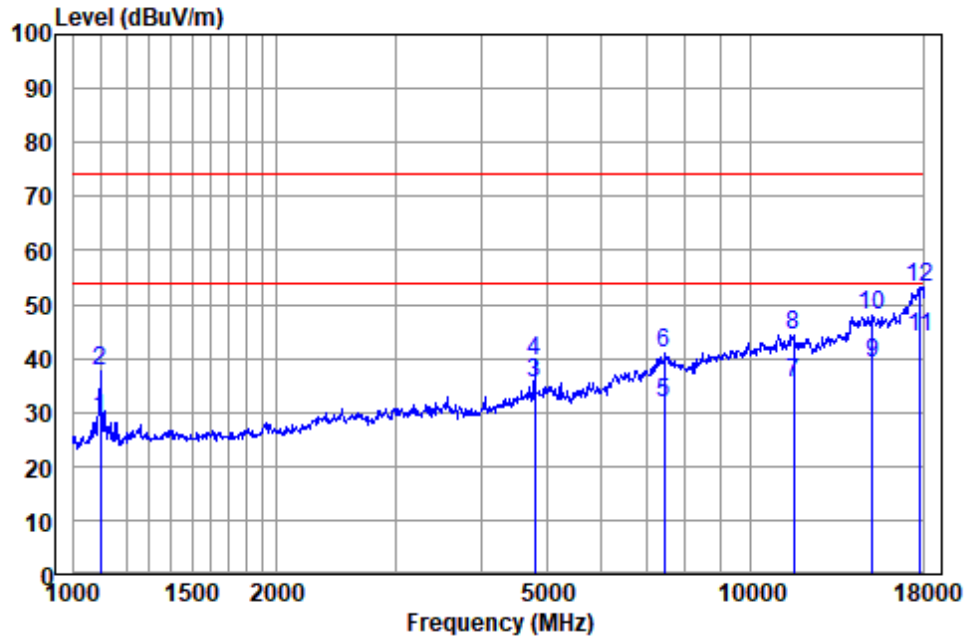


Antenna Polarity :VERTICAL
EUT/Project :3102HS
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1071.832	40.04	22.60	3.60	41.90	24.34	54.00	-29.66	Average
2	1071.832	53.04	22.60	3.60	41.90	37.34	74.00	-36.66	Peak
3	1203.199	37.92	23.00	3.83	41.90	22.85	54.00	-31.15	Average
4	1203.199	46.92	23.00	3.83	41.90	31.85	74.00	-42.15	Peak
5	1394.300	34.42	23.47	4.10	41.90	20.09	54.00	-33.91	Average
6	1394.300	43.42	23.47	4.10	41.90	29.09	74.00	-44.91	Peak
7	10980.470	25.91	39.48	11.65	42.50	34.54	54.00	-19.46	Average
8	10980.470	35.91	39.48	11.65	42.50	44.54	74.00	-29.46	Peak
9	15134.080	29.06	40.17	13.42	42.08	40.57	54.00	-13.43	Average
10	15134.080	37.06	40.17	13.42	42.08	48.57	74.00	-25.43	Peak
11	18000.000	25.59	44.20	14.37	40.70	43.46	54.00	-10.54	Average
12	18000.000	35.59	44.20	14.37	40.70	53.46	74.00	-20.54	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal

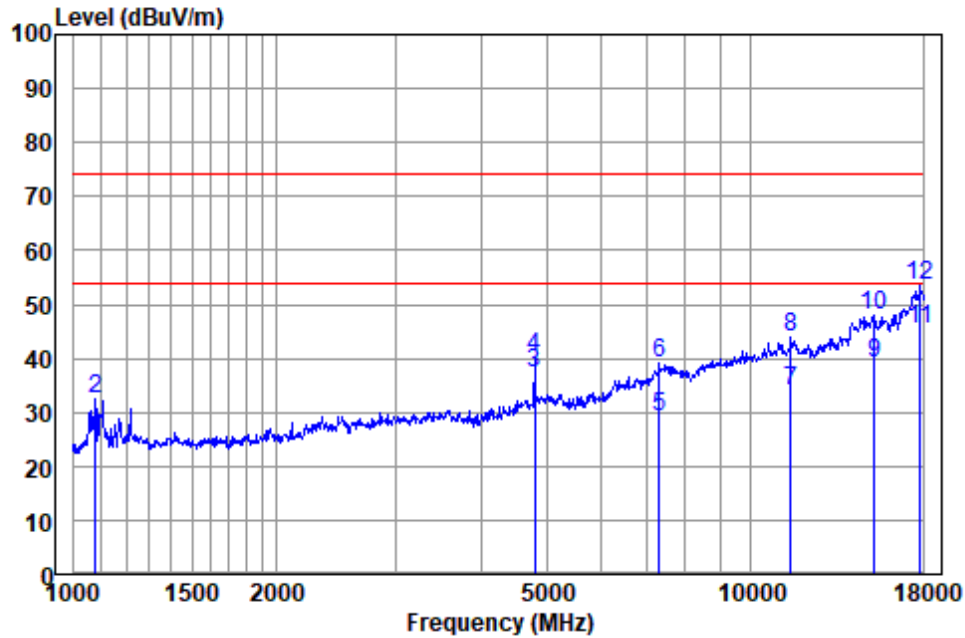


Antenna Polarity :HORIZONTAL
EUT/Project :3102HS
Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1100.079	44.06	23.00	3.64	41.90	28.80	54.00	-25.20	Average
2	1100.079	53.06	23.00	3.64	41.90	37.80	74.00	-36.20	Peak
3	4804.110	39.17	31.10	8.01	42.76	35.52	54.00	-18.48	Average
4	4804.110	43.17	31.10	8.01	42.76	39.52	74.00	-34.48	Peak
5	7454.429	28.64	36.20	9.51	42.52	31.83	54.00	-22.17	Average
6	7454.429	37.64	36.20	9.51	42.52	40.83	74.00	-33.17	Peak
7	11533.480	26.70	39.37	11.87	42.57	35.37	54.00	-18.63	Average
8	11533.480	35.70	39.37	11.87	42.57	44.37	74.00	-29.63	Peak
9	15090.400	27.39	40.30	13.39	42.11	38.97	54.00	-15.03	Average
10	15090.400	36.39	40.30	13.39	42.11	47.97	74.00	-26.03	Peak
11	17741.740	26.50	43.80	14.33	40.54	44.09	54.00	-9.91	Average
12	17741.740	35.50	43.80	14.33	40.54	53.09	74.00	-20.91	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical



Antenna Polarity :VERTICAL
EUT/Project :3102HS
Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1081.166	39.99	22.80	3.60	41.90	24.49	54.00	-29.51	Average
2	1081.166	47.99	22.80	3.60	41.90	32.49	74.00	-41.51	Peak
3	4804.110	40.83	31.10	8.01	42.76	37.18	54.00	-16.82	Average
4	4804.110	43.83	31.10	8.01	42.76	40.18	74.00	-33.82	Peak
5	7326.267	25.93	36.23	9.46	42.60	29.02	54.00	-24.98	Average
6	7326.267	35.93	36.23	9.46	42.60	39.02	74.00	-34.98	Peak
7	11433.910	25.43	39.27	11.83	42.50	34.03	54.00	-19.97	Average
8	11433.910	35.43	39.27	11.83	42.50	44.03	74.00	-19.97	Peak
9	15177.890	27.60	39.97	13.43	42.03	38.97	54.00	-15.03	Average
10	15177.890	36.60	39.97	13.43	42.03	47.97	74.00	-26.03	Peak
11	17741.740	27.80	43.80	14.33	40.54	45.39	54.00	-8.61	Average
12	17741.740	35.80	43.80	14.33	40.54	53.39	74.00	-20.61	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7 Test Setup Photo

Conducted Emissions at Mains Terminals (150kHz-30MHz)



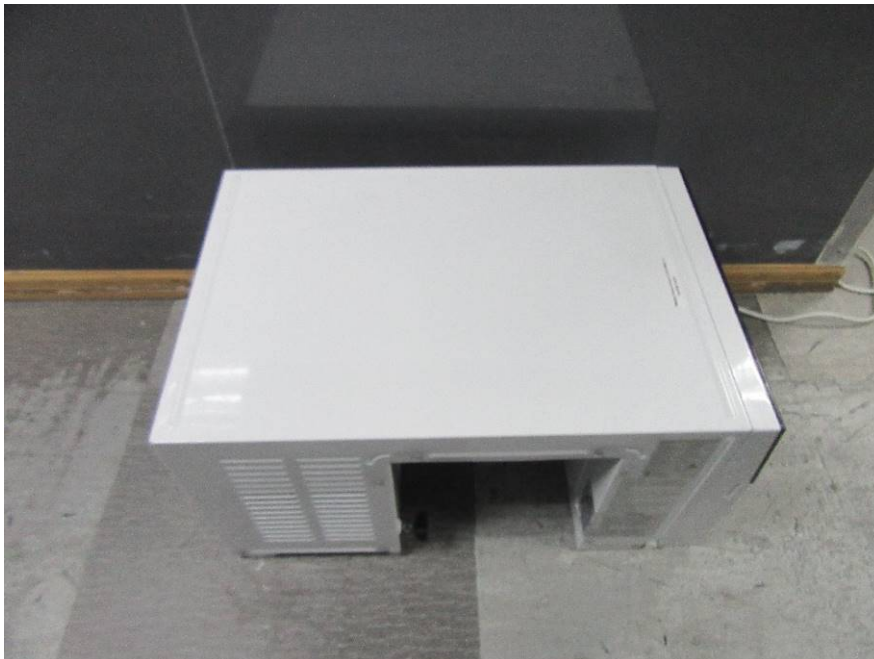
Radiated Emissions (30MHz-1GHz)

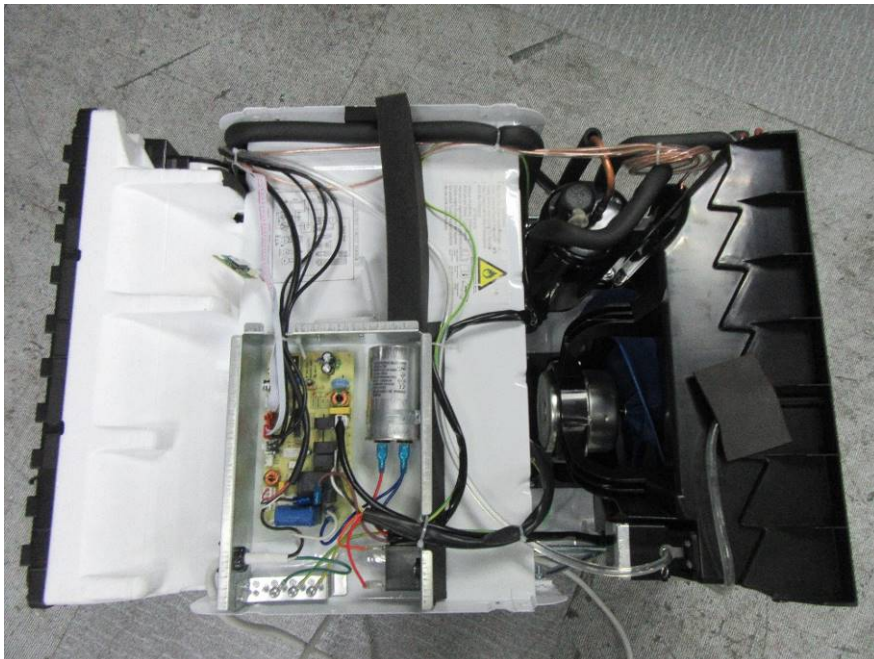


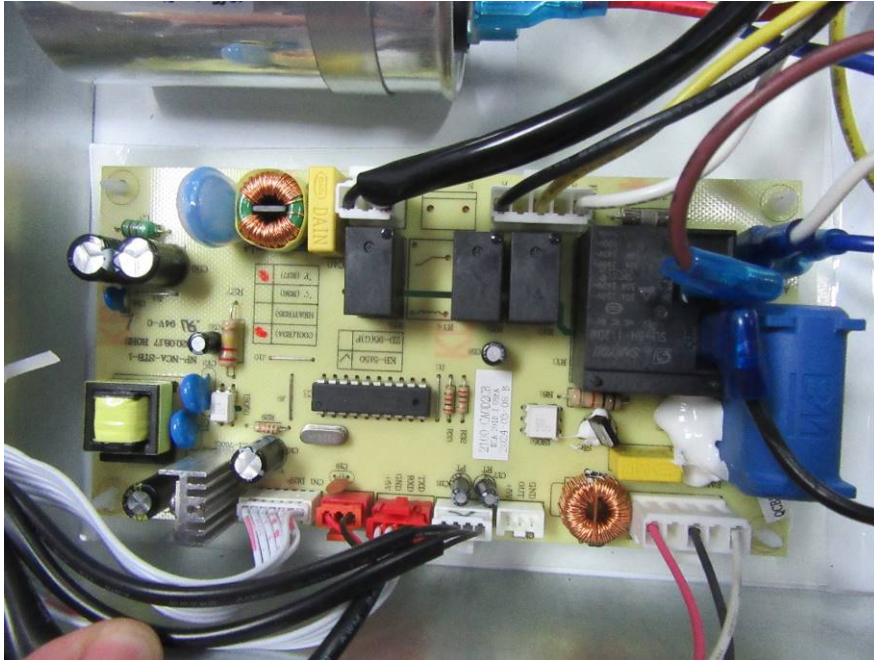
Radiated Emissions (Above 1GHz)

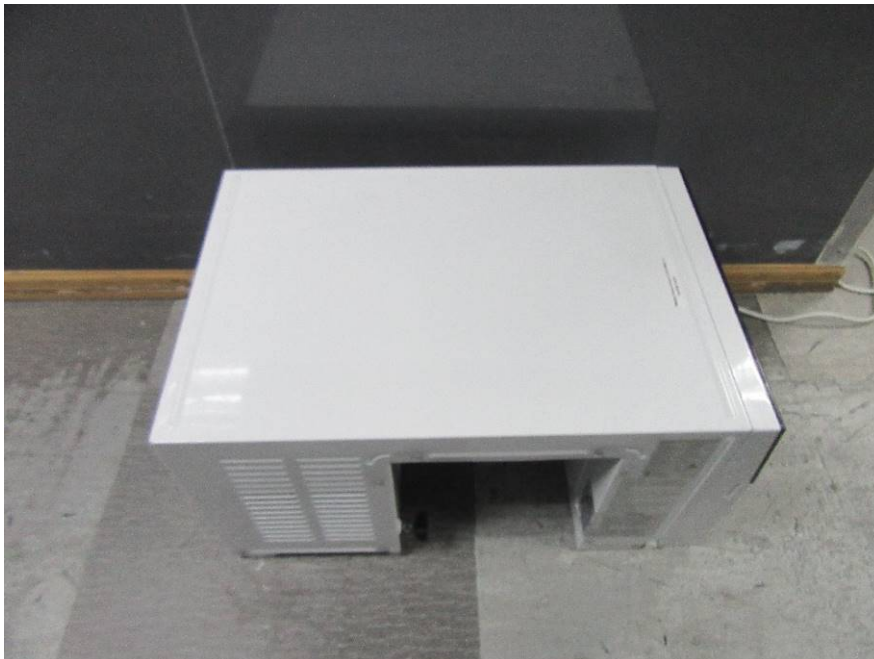


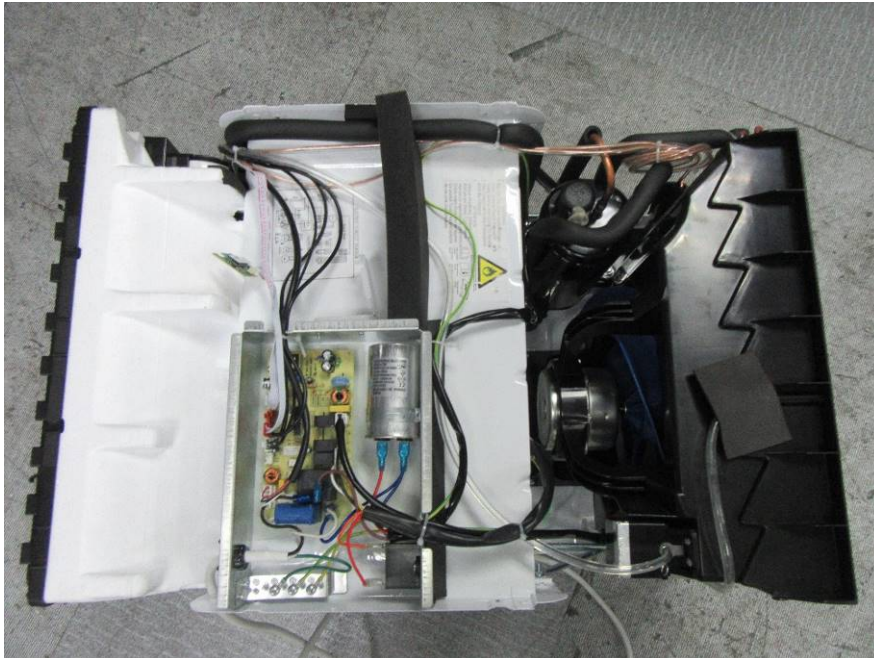
8 EUT Constructional Details (EUT Photos)

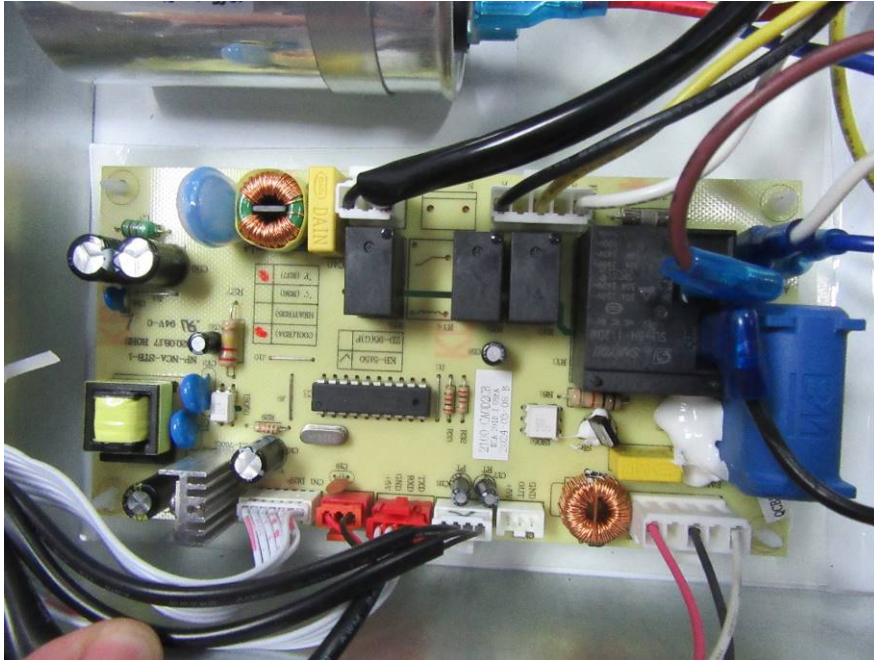


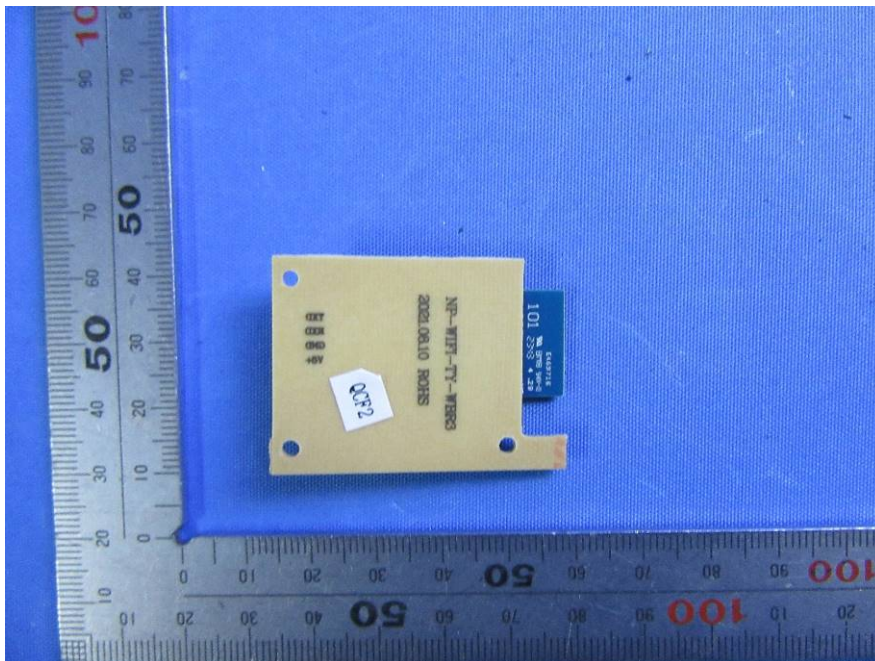
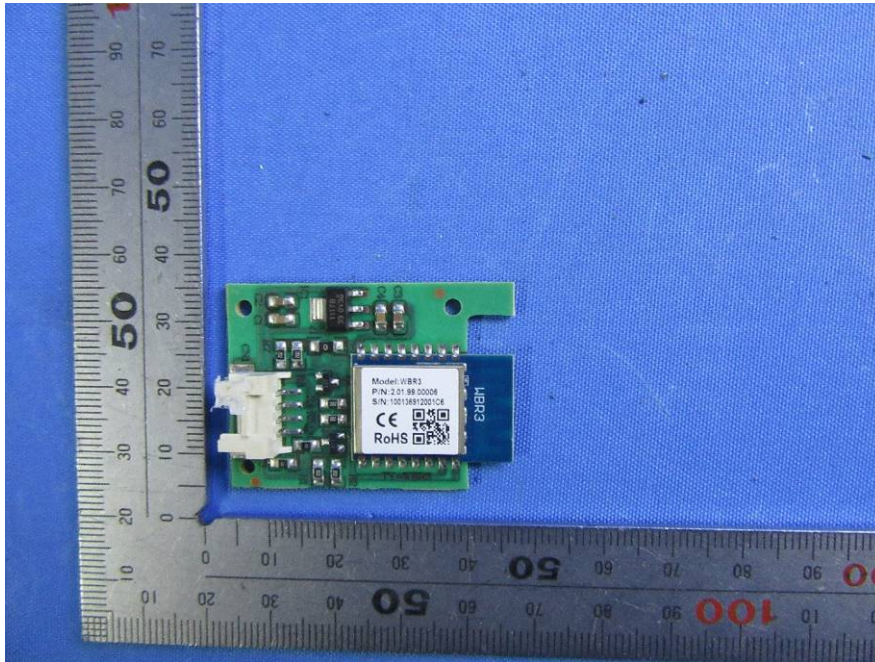












- End of the Report -